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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/560,819	04/28/2000	Hiroshi Oagawa	1982-0149P	5103

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EXAMINER

ROY, SIKHA

ART UNIT PAPER NUMBER

2879

DATE MAILED: 10/29/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/560,819

Applicant(s)

OAGAWA, HIROSHI

Examiner

Sikha Roy

Art Unit

2879

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 August 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) _____ is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

The Amendment, filed on August 6, 2002, has been entered and is acknowledged by the Examiner.

Cancellation of claim 2 has been entered.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1,3,4,5 and 7,8 are rejected under 35 U.S.C. 102(b) as being anticipated by U. S. Patent 4,574,102 to Arakawa et al.

Regarding claim 1 Arakawa et al. disclose (column 3 lines 30-50) a radiation image conversion panel enhanced in both sharpness and bonding strength by making the mixing ratio of the binder to the stimuable phosphor inside phosphor layer smaller than the mixing ratio in the vicinity of the uppermost layer (interface between the protective film and the phosphor layer). The distribution of the binder and phosphor is adjusted such a way that the amount (by weight) of the binder to the uppermost phosphor layer is greater than that of the binder to the stimuable phosphor in any other layers. Arakawa et al. further notes (column 7 lines 60-66) the ratio is within the range preferably from 1:8 to 1:50 (binder: phosphor, by weight) so that the amount of binder by weight in the uppermost layer is greater than that of the binder in other layer is by 10.5 wt % which is certainly more than 0.5 wt% as claimed.

Art Unit: 2879

Referring to claim 3 Arakawa et al. disclose (column 7 lines 60-66) the mixing ratio is within the range of 1:1 to 1:100 (binder : phosphor, by weight).

Referring to claim 4 Arakawa et al. disclose (column 5 lines 10-13) the stimuable phosphor is desired to give stimulated emission in the wavelength range of 300-500 nm when excited with stimulating rays in the wavelength range of 400 to 850 nm.

Regarding claim 5 Arakawa et al. disclose (column 5 lines 14-30, column 11 lines 12-15) stimuable phosphor employable in the radiation image conversion panel includes bivalent europium-activated alkaline earth metal halide phosphor ($\text{Ba}_{1-x-y}\text{Mg}_x\text{Ca}_y$)FX:aEu²⁺, X being at least one element selected from the group consisting of Cl, Br, x,y are numbers satisfying $0 < x+y \leq 0.6$, $xy \neq 0$ and a satisfies the condition $10^{-6} \leq a \leq 5 \times 10^{-2}$.

Regarding claims 7 and 8 Arakawa et al. disclose (column 7 lines 28-36) thermoplastic elastomer binders can be selected from polyvinyl acetate, polyurethane, linear polyester, polyvinyl chloride.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over U. S. Patent 4,574,102 to Arakawa et al. in view of U. S. Patent 5,789,021 to Dooms et al.

Claim 6 differs from Arakawa et al. in that Arakawa et al. do not exemplify the phosphor grain size ranging from 1 to 15 μm .

Dooms et al. in analogous art of manufacturing of luminescent article dispersed in binder disclose (column 5 lines 66,67, column 6 lines 1-7) the average grain size of the phosphor particles in the range of 2 to 20 μm . Dooms et al. further disclose that sharper images with less noise are obtained with phosphor particles of smaller mean particle size but light emission efficiency declines with decreasing particle size. The optimum mean particle size for a given application is selected depending on the desired imaging speed and image sharpness.

Therefore it would have been obvious to one of ordinary skill in the art at the time of invention to specify the grain size of phosphor particles of the panel of Arakawa et al. as suggested by Dooms et al. for desired image sharpness with improved noise. Arakawa et al. in view of Dooms et al. disclose the claimed invention except for the limitation of range of grain size of phosphor particles being from 1 to 15 μm . It has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233. It would have been obvious to one having ordinary skill in the art at the time the invention was made to select the grain size of phosphor particles between 1 and 15 μm , since optimization of workable ranges depending on the desired image sharpness is considered within the skill of the art.

Response to Arguments

Applicant's arguments filed August 6, 2002 have been fully considered but they are not persuasive.

In response to Applicant's argument that no evidence has been provided that an amount by weight of the binder to the stimuable phosphor in the uppermost phosphor layer of the phosphor layers is greater than that of the binder to the stimuable phosphor layer in any other layers by at least 0.5 wt% the Examiner submits Arakawa et al. notes (column 7 lines 60-66) the ratio is within the range preferably from 1:8 to 1:50 (binder: phosphor, by weight) so that the amount of binder by weight in the uppermost layer is greater than that of the binder in other layer is by 10.5 wt % which is certainly more than 0.5 wt% as claimed. In response to applicant's argument that the references fail to show unexpected advantages such as improved S/N ratio of applicant's invention, it is noted that the features upon which applicant relies are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. U. S. Patent 4,922,105 to Hosoi discloses the grain size of the phosphor particles in radiation image panel ranges from 1 to 100 μm .

Art Unit: 2879

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sikha Roy whose telephone number is (703) 308-2826. The examiner can normally be reached on Monday-Friday 8:00 a.m. – 4:30 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimeshkumar D. Patel can be reached on (703) 305-4794. The fax phone number for the organization is (703) 308-7382.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

S.R.

Sikha Roy
Patent Examiner
Art Unit 2879


VIP PATEL
PRIMARY EXAMINER